MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2320
Gaithersburg, Maryland 20899-2320

SRM Number: 114q
MSDS Number: 114q
SRM Name: Portland Cement Fineness Standard

Date of Issue: 23 March 2005

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Description: This Standard Reference Material (SRM) is intended for use in calibrating fineness testing equipment according to ASTM Standard Methods. The SRM unit consists of a total of approximately 110 g of powdered cement, packaged in 20 glass vials with plastic caps, each containing approximately 5 g of cement and individually sealed in foil bags.

Substance: Portland Cement.

Other Designations: Portland Cement (cement; hydraulic cement; Portland cement silicate)

2. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Component	CAS Registry	EC Number (EINECS)	Concentration (%)
Portland Cement	65957-15-1	266-043-4	100

Index, R/S Phrases (EC): Not determined.

3. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 2 Fire = 0 Reactivity = 0

Major Health Hazards: Respiratory track irritation, skin irritation, eye irritation.

Physical Hazards: Not applicable.

Potential Health Effects (short term exposure)

Inhalation: Irritation to the mucous membranes and respiratory tract.

Skin Contact: Irritation, blisters and skin disorders.

Eye Contact: Irritation, visual disturbances, eye damage.

Ingestion: No information on significant adverse effects.

Listed as a Carcinogen/Potential Carcinogen

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens		X
In the International Agency for Research on Cancer (IARC) Monographs		X
By the Occupational Safety and Health Administration (OSHA)		X

4. First Aid Measures

Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration by qualified personnel. Get immediate medical attention.

Skin Contact: Wash affected skin with soap and water for at least 15 minutes while removing contaminated clothing. Get medical attention, if needed.

Eye Contact: Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Get immediate medical attention.

Ingestion: If a large amount is swallowed, get immediate medical attention.

5. Fire Fighting Measures

Fire and Explosion Hazards: Neglible fire hazard. Vapor/air mixtures are explosive above flash point.

Extinguishing Media: Use extinguishing media appropriate for the surrounding fire.

Fire Fighting: Avoid inhalation of material or combustion by-products. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus (SCBA).

Flash Point (°C): Not applicable **Autoignition (°C):** Not applicable **Method:** Not applicable

Flammability Limits in Air (Volume %): **Upper:** Not applicable

Lower: Not applicable

Flammability Class (OSHA): Not applicable.

6. Accidental Release Measures

Occupational Release: Collect spilled material in appropriate container for proper disposal. Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers. Refer to Section 13 "Disposal Considerations".

7. Handling and Storage

Storage: Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances. Keep dry. Store with bases.

Safe Handling Precautions: Wear splash resistant safety goggles. Wear chemical resistant clothing and gloves. An eye wash station and washing facilities should be readily available near handling and use areas. Use methods to minimize dust. See Section 8"Exposure Controls and Personal Protection".

8. Exposure Controls and Personal Protection

Portland Cement

OSHA TWA: 5 mg/m^3 (respirable dust fraction)
OSHA TWA: 15 mg/m^3 (total dust)
NIOSH TWA: 5 mg/m^3/10 hour (respirable fraction)
UK OES TWA: 4 mg/m^3 (respirable dust)
UK OES TWA: 10 mg/m^3 (total inhalable dust)

Ventilation: Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Respirator: If necessary, refer to the "NIOSH Guide to the Selection and Use of Particulate Respirators Certified under 42 CFR 84" for selection and use of respirators certified by NIOSH.

Eye Protection: Wear safety goggles with a faceshield. **DO NOT** wear contact lenses in the laboratory. An eye wash station should be readily available near of handling and use areas.

Personal Protection: Wear protective clothing and chemically resistant gloves to prevent skin exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Portland Cement
Appearance and Odor: odorless white to gray powder
Density (g/cm^3): 3.25
Solubility in Water (%): 0.1 to 1
Ph: 12 (wet cement)

10. STABILITY AND REACTIVITY

Stability: X Stable _____ Unstable

Stable at normal temperatures and pressure.

Conditions to Avoid: Avoid generating dust.

Incompatible Materials: Not applicable.

Fire/Explosion Information: See Section 5 "Fire Fighting Measures".

Hazardous Decomposition: Thermal decomposition produces miscellaneous decomposition products.

Hazardous Polymerization: _____ Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry: X Inhalation X Skin X Ingestion

Portland Cement

Portland cement is an irritant to the eye and skin.

Health Effects (Acute Exposure)

Inhalation may cause irritation to the mucous membranes and respiratory disorders. Skin contact with dry Portland cement may cause irritation and dermatitis. Skin contact with wet cement, combined with prolonged contact time and pressure may cause ulcerations and possibly burns. Sensitivity to constituents of cement may induce allergic skin reactions. Eye exposure may cause irritation. Eye contact with wet cement may cause a burning sensation, corneal edema indicated by seeing halos around lights, and injury to the conjunctiva.

Medical Conditions Generally Aggravated by Exposure: Respiratory disorders.

12. ECOLOGICAL INFORMATION

Environmental Summary: Not available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with all applicable federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: Not applicable.
Canadian Transportation WHMIS: Not applicable.

15. REGULATORY INFORMATION

U.S. REGULATIONS

CERCLA Sections 102a/103 (40 CFR 302.4): Not applicable.

SARA Title III Section 302 (40 CFR 355.30): Not applicable.

SARA Title III Section 304 (40 CFR 355.40): Not applicable.

SARA Title III Section 313 (40 CFR 372.65): Not applicable.

OSHA Process Safety (29 CFR 1910.119): Not applicable.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21)

ACUTE:	Yes
CHRONIC:	No
FIRE:	No
REACTIVE:	No
SUDDEN RELEASE:	No

STATE REGULATIONS

California Proposition 65: Silica, crystalline components (airborne particles of respirable size) known to cause Cancer (Oct 01, 1988).

CANADIAN REGULATIONS

WHMIS Classification: Not determined.

EUROPEAN REGULATIONS

EC Classifications: Not determined.

NATIONAL INVENTORY STATUS

U.S. Inventory (TSCA): Listed on inventory.

TSCA 12(b), Export Notification: Not listed.

16. OTHER INFORMATION

Sources: MDL Information Systems, Inc., MSDS *Portland Cement*, 18 March 2004.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use as a guide in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.